



电压互感器二次绕组中性点保护措施研究

李谦¹, 郑晓光¹, 饶章权¹, 刘玮², 梁文进², 袁亮荣³, 游伏生⁴, 林福昌⁵, 刘琦⁵, 曾嵘⁶

摘要: 实施雷电侵入、雷直击和工频接地故障状态下电压互感器二次绕组中性点的雷电传递和地网两点间电位差的实验和仿真研究。结果显示: 雷电冲击波头对二次侧振荡峰值的影响非常明显, 电压型和电容型电压互感器的传递过电压幅值均随波头时间的缩短而上升; 加装避雷器保护后传递到二次绕组中性点的过电压得到了明显的限制, 表明低压无间隙金属氧化物避雷器 (MOA) 适用于电压互感器二次绕组中性点过电压保护, 但所选择的避雷器额定电压要与实际情况相适应。

关键词: 电压互感器; 二次绕组中性点; 过电压保护; 氧化锌避雷器

Research for the Neutral Point Protection Measures of Voltage Transformer's Secondary Windings

LI Qian¹, ZHENG Xiao-guang¹, RAO Zhang-quan¹, LIU Wei², LIANG Wen-jin², YUAN Liang-rong³,
YOU Fu-sheng⁴, LIN Fu-chang⁵, LIU Qi⁵, ZENG Rong⁶

Abstract: Experimental and simulation studies are carried out on the lightning transfer in the neutral point of the voltage transformer's secondary winding and the potential difference between two points of ground network in the situations of lightning invasion, direct lightning stroke and power frequency grounding fault. The results show that the risetime of lightning surge wave has obvious influence on the over-voltage level of lightning transmission at the neutral point of the secondary winding, and the breadth values of the level for both the voltage-type and capacitance-type voltage transformer increase rapidly as the risetime of lightning surge wave decreases. The over-voltage level is limited greatly by an arrester, indicating that the ZnO arrester (MOA) can work well for protection against the over-voltage of the neutral point of the secondary winding, but it should be careful to choose suitable rating voltage of the arrester.

Key words: voltage transformer; the neutral point of the secondary winding; over-voltage protection; ZnO arrester

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